

# DESCRIPTION

(With Illustrations)

OF

## IRON AND WIRE FENCES, GATES, ETC. ETC.

ADAPTED SPECIALLY FOR

### AUSTRALIA,

INVENTED AND MANUFACTURED BY

CHARLES D. YOUNG AND COMPANY,

IRON AND WIRE MANUFACTURERS, IRON FOUNDERS,  
CONTRACTORS, ETC

By  
Appointment,



To  
Her Majesty.

19 Great George Street, Westminster,..... LONDON.  
48 New Buildings, North Bridge,..... EDINBURGH.

ALSO AT

32 ST ENOCH SQUARE, ..... GLASGOW.  
1 CASTLE BUILDINGS, DERBY SQUARE, ... LIVERPOOL.

W. BURNES,

Printer

## PRIZE LIST FOR 1850.

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Messrs CHARLES D. YOUNG and CO. refer with much pleasure to the following List of **PRIZES** and **PREMIUMS** gained this season in competition at the several **AGRICULTURAL EXHIBITIONS** in England, Scotland, and Ireland. To those Landed Proprietors and Agriculturists who may not hitherto have favoured C. D. Y. & Co. with a share of their patronage, these may be considered a sufficient guarantee for the great superiority as well as the cheapness of their manufactures.

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### FROM THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND, AT THEIR GLASGOW SHOW.

THE FIRST PRIZE for the best and most economical **IRON CORN-RICK STAND**.  
THE FIRST PRIZE for the best and most economical **WROUGHT-IRON HURDLES**.  
THE FIRST PRIZE for the best and most economical **WROUGHT-IRON FIELD GATE**.  
THE FIRST PRIZE for the best and most economical **WROUGHT-IRON FIELD GATE** of another construction.

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### FROM THE ROYAL NORTHERN AGRICULTURAL SOCIETY, AT THEIR ABERDEEN SHOW.

THE FIRST PRIZE for the best and most economical **IRON CORN-RICK STAND**.  
THE FIRST PRIZE for the best and most economical **WROUGHT-IRON FIELD GATE**.  
THE HONORARY CERTIFICATE of MERIT for the best and most economical **IRON HURDLES**.

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### FROM THE NORTHUMBERLAND AGRICULTURAL SOCIETY, AT THEIR ALNWICK SHOW.

THE FIRST PRIZE for the best and most economical **IRON CORN-RICK STAND**.

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### FROM THE ROYAL NORTH LANCASHIRE AGRICULTURAL SOCIETY, AT THEIR BURNLEY SHOW.

THE FIRST PRIZE for the best and most economical **IRON CORN-RICK STAND**.

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### FROM THE ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND, AT THEIR CORK SHOW.

THE SILVER MEDAL for the superior construction and economy of their **FENCING, GATES, &c.**

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### FROM THE ROYAL DUBLIN SOCIETY, AT THEIR DUBLIN SHOW.

THE HONORARY CERTIFICATE OF MERIT for the superiority and economy of their Several Manufactures.

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### FROM THE LIVERPOOL AND MANCHESTER AGRICULTURAL SOCIETY, AT THEIR WARRINGTON SHOW.

SOCIETY'S MEDAL for the best and most economical **IRON CORN-RICK STAND**.

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### FROM THE SOUTH LANCASHIRE AGRICULTURAL SOCIETY, AT THEIR BURY SHOW.

the superiority and economy of their **SEVERAL MANUFACTURES**.  
ATION for the best and most economical **WROUGHT-IRON FIELD GATE**.  
TION for the best and most economical **CARRIAGE GATE**.  
ON for the best and most economical **IRON CORN-RICK STAND**.

# DESCRIPTION

(With Illustrations)

OF

## IRON AND WIRE FENCES, GATES, ETC. ETC.

ADAPTED SPECIALLY FOR

### A U S T R A L I A,

INVENTED AND MANUFACTURED BY

CHARLES D. YOUNG AND COMPANY,

IRON AND WIRE WORK MANUFACTURERS, IRON FOUNDERS,  
CONTRACTORS, ETC.

BY  
APPOINTMENT,



TO  
HER MAJESTY.

19 GREAT GEORGE STREET, WESTMINSTER ..... LONDON.  
48 NEW BUILDINGS, NORTH BRIDGE ..... EDINBURGH.

ALSO AT

32 ST ENOCH SQUARE .....GLASGOW.  
1 CASTLE BUILDINGS, DERBY SQUARE...LIVERPOOL.

## IRON AND WIRE FENCES FOR AUSTRALIA, ETC.

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MESSRS CHARLES D. YOUNG and COMPANY having of late been frequently applied to for drawings of their Australian Wire Fences, have had a series of these engraved, which they have now published in the following form, accompanied by such descriptive remarks as they deemed necessary to give the subject that explanation and prominence which its present importance requires, and which they trust will sufficiently illustrate the superior advantages of that system of Fencing so suitable to the existing circumstances of these colonies.

Messrs C. D. YOUNG and COMPANY would at the same time state that they have specially prepared a copiously illustrated edition of their '*Instructions*' for fitting up Wire Fences, and which are so distinct and simple that any one will be enabled to construct them without the least difficulty,—copies of which are sent with every order they receive; and they would also add, that notwithstanding the lowness of their given quotations, these imply the employment of materials and workmanship of a first class character,—their extended reputation as manufacturers at home and abroad having been obtained by an undeviating adherence to this great principle of their business.

Parties abroad ordering direct from Messrs C. D. YOUNG and Co., would require to send a remittance for the amount of their order, or give a reference to some of their correspondents in this country for payment on shipment being completed.

Messrs C. D. Y. and Co. may also mention that they manufacture every description of Iron Work, Iron Houses, Stores, &c., Bridges, Agricultural Implements, and Machinery.

## DESCRIPTION

OF THE SEVERAL VARIETIES OF

# IRON AND WIRE FENCING, GATES, &c.

MANUFACTURED BY CHARLES D. YOUNG AND CO.

**FOR AUSTRALIA.**

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A considerable period has now elapsed since we introduced WIRE as a material suitable for the ordinary purposes of field inclosure,—before which time it was only adopted for the more ornamental objects of protection. It occurred to us then that it would be equally applicable to uses much more important and general, and might be made available as a substitute for, or an auxiliary to, the materials usually employed for fences on farms, against Horses, Cattle, and Sheep.

The objects we sought to obtain for these purposes were, *strength and security, facility of construction, economy in its first cost and subsequent maintenance, and ease and cheapness of transit*—conditions in fences of the greatest consequence to all in any way concerned in lands or pasture grounds. And that Wire Fencing, as it now exists, has met with the appreciation we anticipated, is evidenced in its universal adoption wherever it has become known, whether in this country, the East Indies, or the Colonies; there being no circumstances where enclosures are needed or protection required to which it cannot be advantageously applied, with the exception perhaps of situations where shelter is wanted, and even then, under certain modifications, it is alike valuable.

In the subsequent pages we propose to submit in detail descriptions of those Wire Fences more particularly suitable to the present urgent requirements of Australia. And in seeking to make them as useful and valuable for these as we have for our home circumstances, we have to acknow-

ledge our obligations to the suggestions of several of the most influential and extensive flock-masters, whose knowledge and experience we have not hesitated to avail ourselves of.

The desertion of shepherds, and the great scarcity of labourers, have threatened flock-masters with almost total ruin, by leaving the sheep wholly unattended, as well as unprotected from the ravages of the native wild dog—evils that are alone properly known and estimated by those who have suffered in consequence. These disasters can only be removed or alleviated by a system of Fencing or enclosure adapted to the present necessities of the country, by which shepherds, to a certain extent, can be dispensed with, and the native dogs excluded from the sheep runs. It is obvious, however, unless some mode of Fencing can be obtained, implying all the conditions we have already specified as pertaining to wire, that it would be impossible to render this alternative in any way generally useful, and it is therefore here that its valuable properties become entirely realized. We are aware of one master who requires forty shepherds for his flocks, but who, when he has got his run completely fenced round (which he is busily engaged with now), calculates that ten men will be amply sufficient for his purpose.

The accompanying engravings are intended to illustrate this system of enclosure in its various applications. They will at once give a more graphic idea than can be conveyed by mere verbal description.

PLATE I. We have shewn here a fence intended to exclude wild dogs; it is a strong twisted wire net, and is galvanized; the meshes are  $3\frac{1}{2}$  inches square, and the fence is made with a strong twisted wire selvage at top and bottom, and at the ends. In this Plate it is represented as being attached to wrought iron standards, which are placed in the ground at the distance of every 15 feet. There are two methods of fixing these down, both of which are alike effective, and the adoption of either will be determined by the nature of the locality. One of the standards is made with a triangular foot or base, which is sufficient, without any other means, to secure it in the ground. The other is represented as being driven into a block of timber, which may be from 12 to 14 inches long, by 6 or 8 inches in diameter; it is sunk in the earth two or three inches under the surface, which saves it from the ordinary action of 'wind and water.' This, we admit, is the most economical way where wood is abundant, and can be easily procured. The other is only adopted where wood cannot be so

readily or cheaply obtained. In this fence, we have the main or straining pillars, also of iron, constructed upon a principle fully described in treating on Plate IV, and which, in a fence of this description, we place about 200 yards apart. It will be noticed, that to this straining-pillar is attached a strong spur or stay, the lower end of which is set into the socket of a cast-iron plate, bedded in the earth, to resist the strain the pillar is subjected to in tightening the wire. This cast-iron plate, however, may be dispensed with if a small block of stone or wood can be obtained in its stead.

It will be observed that we have introduced here a single wire above the net fence. To this wire we attach considerable value. It greatly contributes to the strength and stability of the fence, without adding much to its cost, and is a most effective *scare* to any animal attempting to leap over it, besides making it thoroughly effectual, as a fence, against the horses and wild cattle of the country. The entire height of the fence, as we have shewn, is 4 feet 3 inches, viz., 3 inches between the ground and the under selvage, net fence 3 feet 6 inches high, and the upper wire 6 inches above that. With safety it could be placed 2 or 3 inches higher if that were considered necessary.

PLATE II. represents a continuation of the same fence, shewing an intermediate straining or main pillar, which, as we have already stated, is supposed to be about 200 yards from the starting as well as from the succeeding post—a distance we do not consider too great, where only one or two wires are to be strained—the net requiring only to be hung in the slit of the standard, the feather of which may be partially closed upon it, or it may be tied there to the standard with a piece of smaller wire, as it also requires to be at the middle, and at the under selvage of the fence. It will be seen the pillar in this Plate is without any stay, these being only necessary at the extreme pillars, as shewn in the first Engraving.

PLATE III. is a repetition of the net fence, but is exhibited attached to wooden posts instead of iron. In regard to strength, so long as the wood remains undecayed, it is not much inferior to the other; and in respect to *first* cost, it is materially cheaper, and will therefore be chosen in many cases where the runs are extensive, and timber can be procured near at hand, or where they are held under squatting occupation or temporary leases. But from the advantage of this comparative economy must be allowed the cost of procuring the wood, and the risk of bush fires, which

rage more or less in the colonies every summer. This latter evil, however, may in some degree be lessened by the substitution of iron straining-posts, which, if not placed too far apart, will in a great measure maintain the fence in an upright position until the intermediate destroyed standards can be replaced by others. This Engraving represents the standards as being sawn or hewn; but that, we apprehend, will not often be required, the ordinary split posts of the country being quite adequate to the purpose.

As we have already remarked, the fences we have described are specially designed for protection against the native wild dogs, besides enclosure; but in many parts of Australia those destructive animals do not now exist, or are at all events not so numerous as to make it imperative to secure the flocks from their attacks by this means; and we here introduce, for the more general objects of enclosure or division, our well known 'Strained Wire Fence.'

PLATE IV. describes this fence as wholly constructed in iron straining-pillars and intermediate standards; and as we have deemed facility of erection a more indispensable condition in Australia than where labour is more abundant and cheap, we have on this account devised our 'Patent Screw Straining Pillars,' which at once dispenses with the cost and trouble of the underground work always requisite for those principal parts of a wire fence. The pillar is run or screwed into the earth with the utmost ease, the bottom screw being sufficient to give it all the hold that is wanted underneath, and the upper one, having a disc of about 9 inches in diameter, is all that is required for the surface strain.

In a fence of this kind, where the several wires must be strained, it is indispensable to have the pillars and standards nearer to each other than in the net fence; and we therefore recommend the former to be fixed at about 100 or 150 *yards* apart, and the latter from 8 to 9 *feet*. But where the ground is rough and hilly, and the lines in short angles, the distances of the pillars are necessarily less. In ordinary circumstances, 12 to 15 pillars will be found enough for every mile of fence, including one or two gates in that extent.

PLATE V. is a continuation of the fence No. 4, shewing a double-braced iron gate, with pillars, and their stays. The gate we have here introduced is purposely intended to cover a public road where such may

pass through a line of fence. It is made heavier and stronger than where gates are only wanted for the usual service of a farm or sheep-run; and although this gate is represented as being hung to the iron straining-posts of the wire fence, it is applicable to wooden posts as well, where these are used, it being then furnished with suitable hangings for that purpose.

In the above plates IV. and V. we have thought it unnecessary to shew the manner of fixing the standards in the ground, that being already figured in Plate I., and the circumstances where either plan will be adopted, fully described under that drawing.

PLATE VI. exhibits a sheep and cattle fence, as it is constructed for general agricultural purposes, where wood is abundant, and of little value. The pillars and standards are of wood, and the latter are secured in the earth by being either 'pitted' or 'driven.' In hard dry soils it is preferable to pit them, in soft or wet situations they had better be driven. The straining-posts are of necessity fixed in pits; and as the way in which this is done is of the greatest importance to the stability and usefulness of the enclosure, we would specially direct attention to that part of our printed instructions having reference to this point.

In our iron screw pillars these objects are obtained most effectually, but the same principle cannot be applied to wooden posts without incurring too great an expense, and we therefore construct those after the manner shewn in the engravings; it being observed that the spur, whether in extreme or intermediate pillars, is always placed opposite to the tension of the wires while the strain is being put upon them. The drawing of this fence represents the wires as being passed *through* the posts. In general practice we do not advise this method, preferring to staple them to the sides of the posts, as shewn in the succeeding Plate. But staples are not easily driven in the wood that is used for fencing in Australia, if it has been cut or exposed for any length of time to the heat of the climate. It is in this case only that we drill holes for the standards, as represented in the fence.

PLATE VII. We have already observed that the split posts of the country will be those most frequently employed in Australia. In this Plate are exhibited standards of an equally rough or rustic character. And in this drawing we shew another way of fixing the straining or gate pillar, which, though not so neat as the preceding, is nevertheless quite as secure and efficient, and much more readily made and fixed. We

would, however, advocate the substitution of our screwed iron pillars in all cases; for, taking the value of labour and timber into account, they are not much more expensive, if, indeed, at all so, while they give a stability and permanence not obtained by the others, besides a greater security against the effects of bush fires.

The 'Patent Trussed Gate' we here introduce is formed on rather a different principle from that figured in Plate V., our object being to obtain a gate of the required strength, and yet light enough to be cheap and economically conveyed from England, as well as into the interior of the Colonies. It will be noticed that this gate is sustained by a long diagonal tension bar attached to the lower point in front, and strained by nut and screw at the upper heel. To this bar belongs a shorter diagonal, which is also fixed at the bottom of the middle vertical bar. The gate, previous to its being entirely finished, is slightly drawn by the screwed tension bar above the square, when all the bars are then securely rivetted, and the upright and short upper truss bars are thus immoveably fixed in their bearings; the principle here being a *tie* instead of a *strut*, by which we obtain as great a degree of strength as we can produce by the employment of considerably heavier material were the gate constructed in another manner. It will likewise be seen, in both these gates, that the upper and under horizontal bars are *solid, and welded to the back stiles*, and these being at the sametime laid on edgeways, gives an amount of lateral rigidity also highly conducive to their general strength.

PLATE VIII. is an important illustration of our 'Patent Portable Sheep Fold,' intended to supersede the method of folding with wooden hurdles, as it has hitherto been practised in Australia. In a country so entirely pastoral as is the greater part of these Colonies, the labour and cost of so frequently removing the sheep-folds to follow the flocks as they travel onwards, has been a source of complaint most frequently urged on our notice; and it is to obviate this desideratum that we submit the present sheep-fold to the notice of flock-masters.

The sides of the fold are formed of the wire net fence already described (made into lengths to suit every variety of size of fold), than which there is nothing more admirably calculated to fulfil the required conditions of *strength, portability, and protection*; and being thoroughly galvanized, it may also be considered in a measure imperishable. The standards, which are of wrought iron, are composed of three distinct parts;—the first

being the sole, which is gauged with a rod to the required distance, when it is driven into the ground with the heel or a light wooden mallet. The second is the standard itself, which drops into the *inside* socket hole of the sole; the stay is the other part, and is hinged forward and let into the *front* socket hole. The netting is then hung on the inside of the standards, and is tied to them at the middle and bottom with a leather thong—the top selvage being secured in the slit in a similar way. The fold is now completely pitched; and when taken up, or struck, the net for each side is again loosely rolled up, the standards and stays taken from the soles, and the soles drawn from the ground. The gate is moveable too, and affords ample opportunity for counting the sheep as they pass out in the morning—the entire arrangements being calculated to give every facility for setting and removal, in combination with strength and economy.

The Drawing represents the fold as being quite vertical in all the four sides. In reality, however, they will lean outwards about four or five inches. This lessens the pressure from within, in the event of alarm from the native dogs during the night. And to give it this outward inclination the standards are kneed to the required angle at the bottom, so that the shepherd has no care with regard to this, farther than placing a light iron shackle on the corner standards, where they are spread out or separated in consequence.

In the preceding pages we have briefly described the Engravings of Wire Fences, such as are considered most suitable to the requirements of Australia, and have in the course of our observations noted several of the advantages connected with this system of enclosure; and we would now advert shortly to those other qualities by which it is equally distinguished, and which will more clearly exhibit the several superior attributes attached to wire as a 'material for the ordinary purposes of sheep and field enclosure.'

Our first conditions were '*strength and security*;' and that these have been entirely realized is proved by its universal and successful application as a fence against every kind of stock, however heavy or wild. Our second was '*facility of construction*;' and here there is no uncertainty, a very large proportion of all the fences erected having been put up by the usual farm-servants, or other ordinarily intelligent work-people, with no other assistance than the illustrated '*Instructions*' we supply with the materials. Our next conditions were '*economy in its first cost and subse-*

'*quent maintenance.*' In the subjoined note of prices, the first point will be ascertained by reference to these, and the known expense of wooden fences in Australia. The second, viz., '*subsequent maintenance,*' will, we daresay, be better illustrated by submitting some extracts from reports made on this subject to one of the principal Agricultural Societies in this country, who some time ago instituted inquiries in regard to it. One gentleman states:—

"The wire-fences I have at Dumbarnie have given me perfect satisfaction, as they have now stood without any repairs, at least very trifling ones, for seven years; and some others which I have on the top of Ha-ha enclosures have now stood for about ten years likewise, at an expense for repairs of a mere trifle."

Another, Mr Halley, agent on the Torrance estates in Strathearn, writes:—

"I put up a wire-fence in wood posts on this estate twelve years ago, and it was repaired this spring for the first time only. I had to renew about one-half of the posts, and found the wire as perfect as it was at first; and I now consider this fence quite as good as new for six years to come, when I expect it will require some additional new posts. Besides this fence, which I have lately repaired, I have put up, during the last eight years, not less than seven or eight miles of wire-fences—some for cattle and some for sheep; and during this period I have had no sort of trouble with them, and they are yet all in good order. I may farther add that there are several of our tenants here presently putting up wire-fences to run a nineteen years' lease, rather than be troubled with the constant repairs necessary to keep up wooden palings."

And we shall only adduce one other testimony, as being sufficient on this part of our subject. It is from Mr Bennet, forester on the Abercairny estates, Perthshire, where there is a vast extent of wire-fencing existing. He remarks:—

"As to repairs, we have had very little of these. The greater portion of our fences being only seven years erected, all we do is to give the wires a coat of paint or tar every two years. I can, however, state, that if a wire-fence is properly put up, it will be much easier and cheaper to keep it in repair than any wooden paling whatever."

We now arrive at the last of our specified qualifications—the '*ease and cheapness of transit,*' both of which conditions are obtained by the smallness of bulk, and lightness of the materials necessary to cover a comparatively large extent of fencing; and there are no circumstances where these

are so imperatively required and valuable as those which now belong to our Australian colonies.

There are only two points more to which we would address ourselves:—one is, to warn our colonists against the use of any but the best materials in the construction of their fences. In England, the evils that have arisen from this source have been in several cases enormous, and particularly on some railways, where a false economy induced the directors to employ the ordinary wire of commerce instead of the prepared wire made expressly for this purpose. And in a very noted instance lately brought to trial, the loss was stated at upwards of £10,000, from the fences being condemned. However serious such consequences may be here, where material and assistance are always at hand to repair the damage, in Australia, the evils and loss occasioned, in any way, by such a cause, must be infinitely increased and more irremediable.

To those unacquainted with the specific qualities of these wires, it will perhaps be satisfactory to state the results of tests to which the two kinds were subjected, also at the instance of the Royal Agricultural Society of Scotland. The subjoined table will indicate their respective tensile strengths, premising that the lengths operated upon were each ten feet, and were in all respects proved in the same manner as they would be in a wire fence:—

‘ Common Wire,’ No. 8, broke with 590 lbs. }				} Without perceptibly stretching.
“ “ “	No. 6, “	844 “		
“ “ “	No. 4, “	1269 “		
‘ Prepared Wire,’ No. 8, broke with 1274 lbs. }				} Stretched about 1 inch.
“ “ “	No. 6, “	1762 “		
“ “ “	No. 4, “	2656 “		

From the above it will appear that the smallest size, No. 8, of the ‘ prepared,’ carried more than the thickest size, No. 4, of the ‘ common ’ wire, giving thus, in the first instance, a greater degree of economy in favour of the prepared wire, and in the second, a saving of one-half the weight in carriage for the same or less amount of strength.

The other circumstance to which we would allude is the readiness with which wire fences can be taken down and removed to other localities. The staples require only to be drawn—the wires recoiled on a portable windlass—a drawing of which accompanies our ‘ Instructions’—and the iron

pillars unscrewed from the ground; and in which state, if not otherwise required at the time, the materials are as eligible and valuable for sale as when first imported.

CHARLES D. YOUNG & CO.

Subjoined, Messrs C. D. Young and Co. enumerate a few of their leading manufactures specially adapted for the requirements of the Colonies and Foreign Countries.

Estimates, with full Specifications of the several varieties of Fencing, &c. described above, will be found on pages 29, 30, and 31 of this pamphlet.

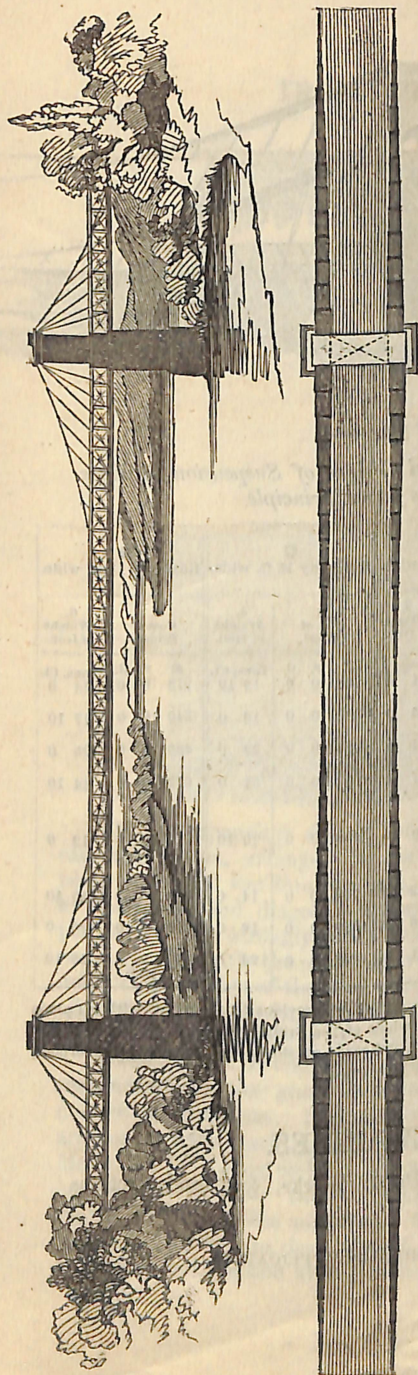
## DREDGE'S PATENT TAPER SUSPENSION BRIDGE.

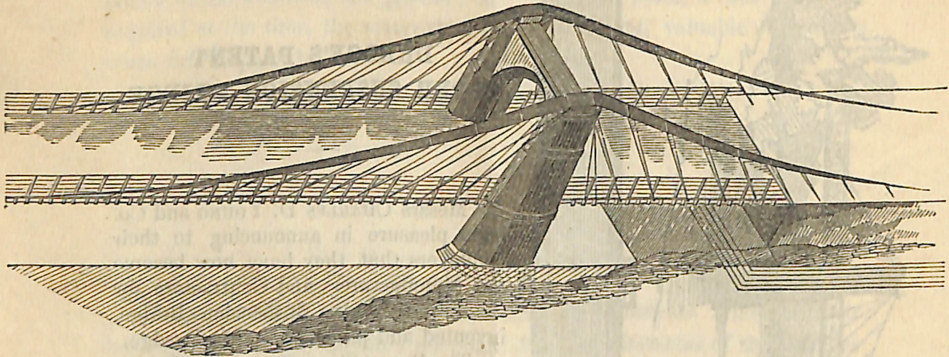
Messrs CHARLES D. YOUNG and Co. have pleasure in announcing to their employers that they have now become the Manufacturers and Contractors for the Patent Taper Suspension Bridge, invented and patented by Mr Dredge.

The Patent Taper Suspension Bridge was introduced to the notice of the public several years ago, and after having to contend against unusual opposition and prejudice, the correctness of the principles upon which it is based has been fully demonstrated both by mathematical investigation and actual experiment, and its merits have been fully established. The principle is not only novel and beautiful, but is one which promises to be of the greatest utility and importance to the world at large, from the fact that it immensely reduces the cost of the means of facilitating communication, at the same time ensuring efficiency and permanency.

Plans and estimates furnished on application at Messrs C. D. Young and Co.'s respective offices in London, Edinburgh, Liverpool, and Glasgow. And in all cases where these have been supplied, and the contract given, no charge will be made for them; but in circumstances where the work is not proceeded with, a moderate charge will be made for the plans, &c.

For fuller particulars, C. D. Young and Co. refer to their Pamphlet on this Bridge, lately published, and which will be forwarded free to any party in the three Kingdoms or Colonies, on application.





ISOMETRICAL VIEW OF THE BRIDGE.

*Table shewing the approximate Cost and Weight of Suspension Bridges constructed upon Dredge's patent principle.*

A	B Roadway 14 ft. wide.		C Roadway 16 ft. wide.		D Roadway 18 ft. wide.	
	1. Cost of Bridge.	2. Weight of Iron.	3. Cost of Bridge.	4. Weight of Iron.	5. Cost of Bridge.	6. Weight of Iron.
	£ s. d.	Tons. Ct.	£ s. d.	Tons. Ct.	£ s. d.	Tons. Ct.
80 feet span, with back chains, .	222 0 0	11 0	250 0 0	12 10	278 0 0	14 0
100       "       "	278 0 0	14 0	312 0 0	16 0	340 0 0	17 10
120       "       "	402 0 0	21 0	424 0 0	22 0	480 0 0	25 0
150       "       "	530 0 0	27 0	602 0 0	31 0	672 0 0	34 10
[ Suspension Viaduct of any length in spans of 80 feet, the calculation being for the iron work between piers, the price being at 80 span, ]	178 0 0	9 0	206 0 0	10 10	234 0 0	12 0
<b>D</b> Suspension Viaduct 100 feet span,	222 0 0	12 0	268 0 0	14 0	296 0 0	15 10
"       "   120       "	292 0 0	16 0	336 0 0	18 0	370 0 0	20 0
"       "   150       "	398 0 0	21 10	428 0 0	23 0	476 0 0	25 10

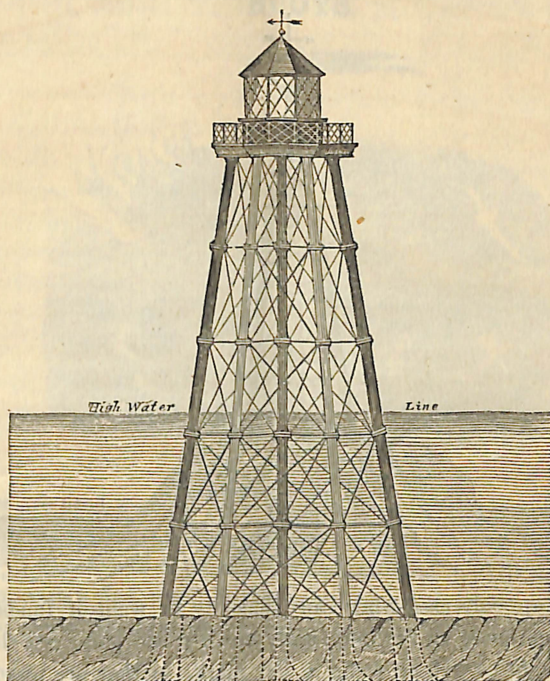
The above are the prices for all the iron work complete, and fitted previous to shipment, with all plans and specifications, and every instruction for erecting, the whole of the Bridge being of wrought and cast iron, and all the iron work painted with the best oil paint, delivered at ship's side at London, Liverpool, Leith, or Glasgow. The prices of other sizes are in relative proportion.

## PATENT SCREW PILES.

For foundations of Piers, Harbours, Public Works, &c., and erections of every description on soft ground.

DETAILED ESTIMATES FURNISHED ON APPLICATION.

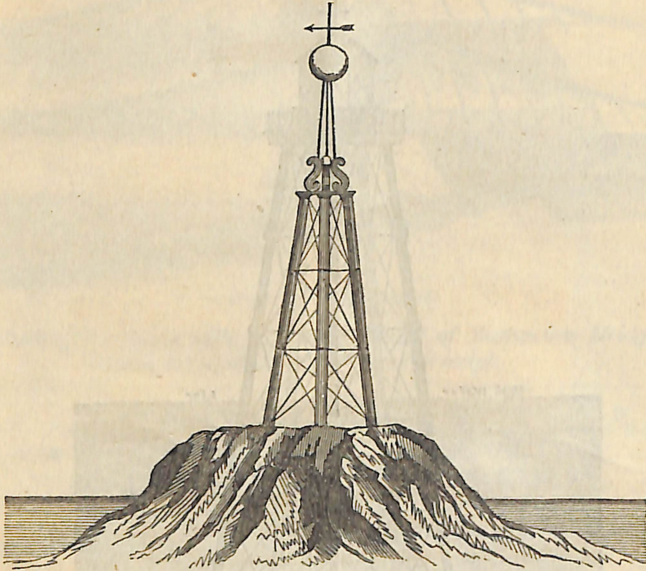
## IRON LIGHTHOUSES.



The accompanying sketch shews a Lighthouse constructed on seven cast-iron pillars, arranged in the form of a regular hexagon, the ends being wedged 6 feet into the rock, and the whole strongly bound together by horizontal and diagonal braces of wrought-iron, having a projecting platform at top strongly railed round, on which is placed the living and store rooms, with the light above. Where the Lighthouse is exposed much to the action of the sea, wrought-iron columns would be used in lieu of cast; and if the foundations are on sand, the necessary security would be obtained by the use of the Screw Pile, or by Dr Pott's method.

Messrs C. D. Young and Co. beg to direct the attention of their correspondents to the great importance of structures of this kind in all dangerous situations. Lighthouses having been generally built of stone, are but partially used, owing to their great expense. The facilities which Messrs C. D. Young and Co. possess for the manufacture of iron structures enable them to offer these erections of iron at a cost scarcely one-sixth that of stone. Other advantages offered by these structures are the small resistance opposed to the action of the waves, and the facility of carriage, transport, and erection at any place.

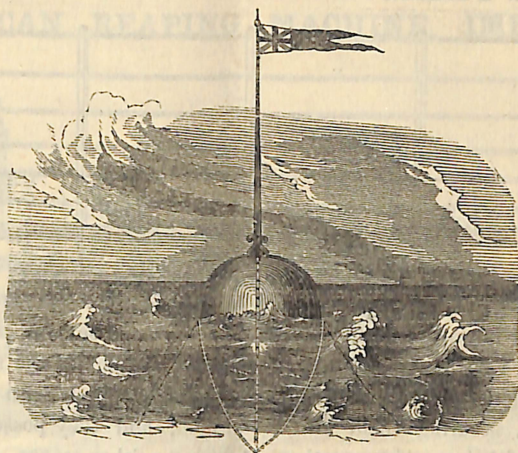
## IRON BEACONS.



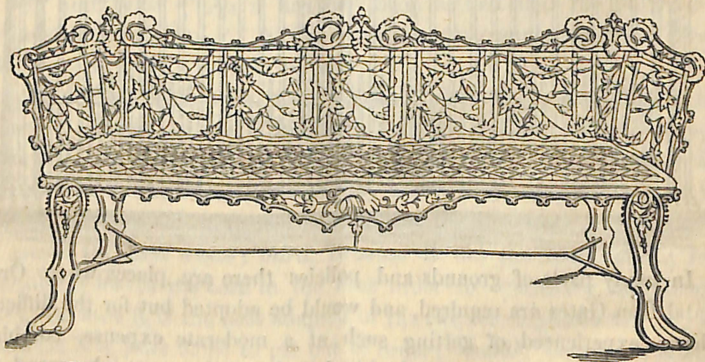
Beacons are only used where any difficulty or want of funds exist in placing a Lighthouse on the same spot, which would point out the danger during the night as well as being a day-mark, or they are placed in narrow or intricate passages which are considered too dangerous for passage by night, and therefore only require a day signal. They are very simple in their construction.

## RAILWAY WORK AND PLANT.

C. D. Young and Co. contract for every description of WROUGHT and CAST-IRON WORK and PLANT for RAILWAYS, such as Chairs, Pins, and Spikes, Turntables, Water Cranes, Points and Switches, Simultaneous Acting Level Crossing Gates, Signals, and Connections, &c. &c., to any extent.

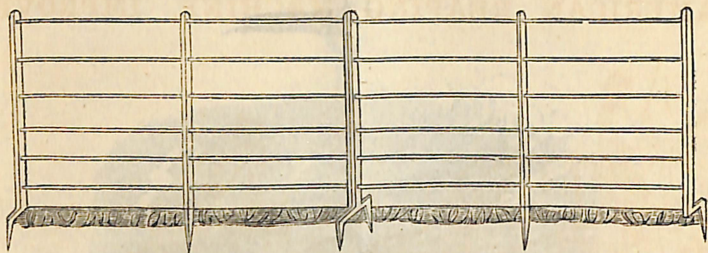
**BUOYS.**

Buoys are used to mark out the navigable channel in a river or tide-way, or to warn against hidden rocks which do not appear at any state of the tide. They may be economically constructed of wrought-iron, weighted at bottom, with a flag, mast, or distinguishing mark at top. They may be moored to screw moorings or otherwise secured.

**CAST-IRON CONVULVULUS GARDEN SEAT.**

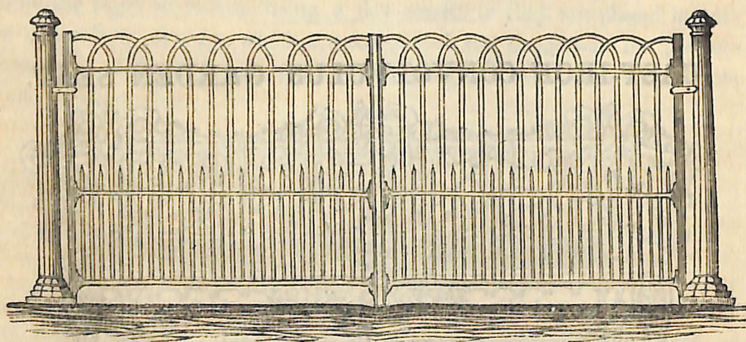
This Chair is made to unscrew for packing, and commands a large sale abroad.

## **STRONG PREMIUM WROUGHT IRON HURDLES.**



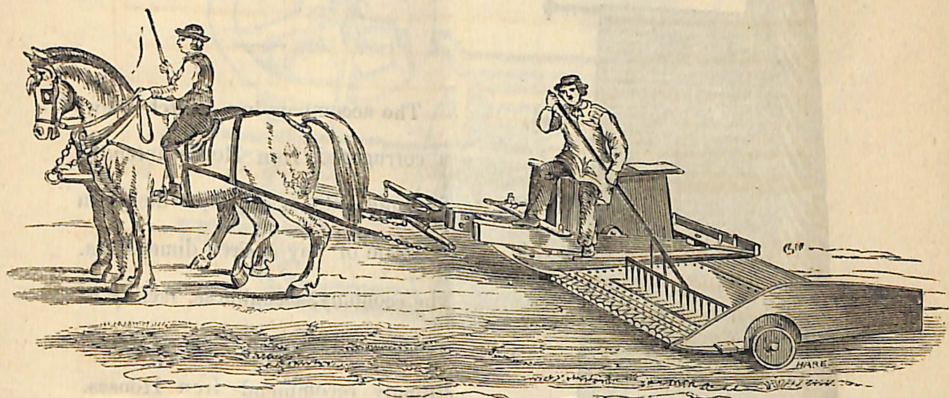
These Hurdles, as manufactured by C. D. Young & Co., are constructed upon a most improved principle, and have carried several premiums and medals from various Agricultural Societies on account of the superiority of their construction and their cheapness. They are made with strong knees and prongs, securing them into the ground, and they possess the great advantage of being self-supporting, requiring neither stones, wood-blocks, nor stays, and can be put up or removed with the greatest facility by any labourer.

## **FINE WROUGHT-IRON CARRIAGE GATES.**



In many parts of grounds and policies there are places where Ornamental Iron Gates are required, and would be adopted but for the difficulty hitherto experienced of getting such at a moderate expense, combined with chasteness of design; and this has been the cause why wood has been employed so universally, to the exclusion of iron.

## HUSSEY'S AMERICAN REAPING MACHINE, IMPROVED.

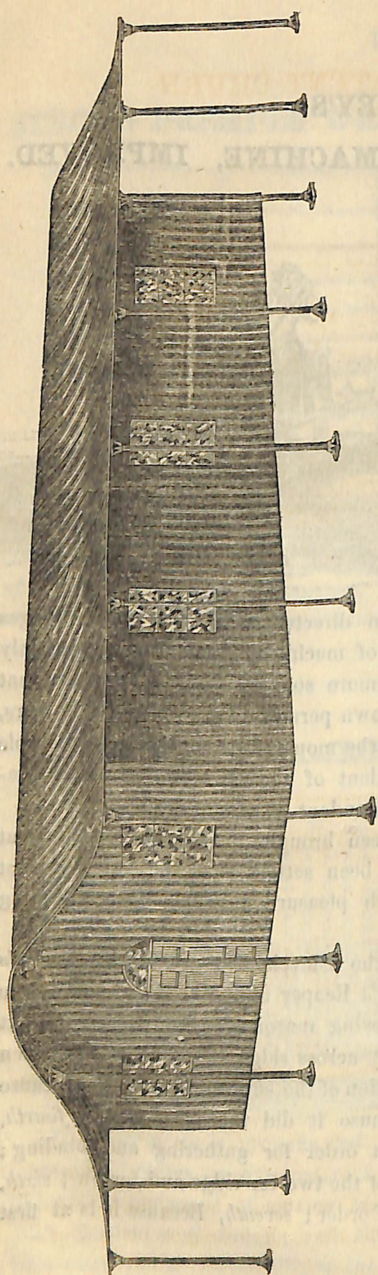


Public attention having now been directed to the great advantages and importance of Reaping by means of machinery, as valuable, not only in an economical point of view, but more so, from the circumstance that the farmer can at any time, with his own permanently employed labourers, complete his harvest by its means, at the moment he considers it advisable to do so, making him quite independent of the uncertainties of the present method, its dangers, and other attendant disadvantages.

Hussey's American Reaper has been brought out by the patentees at a very high price. As it has now been settled that the patent cannot be sustained, C. D. Y. & Co. with pleasure announce these Reaping Machines at greatly reduced prices.

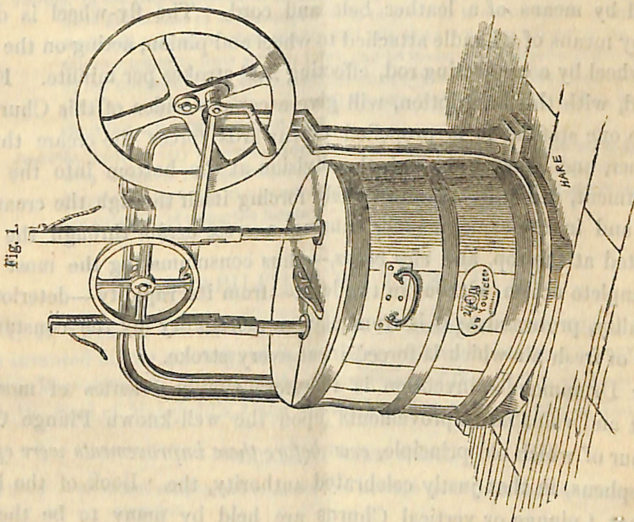
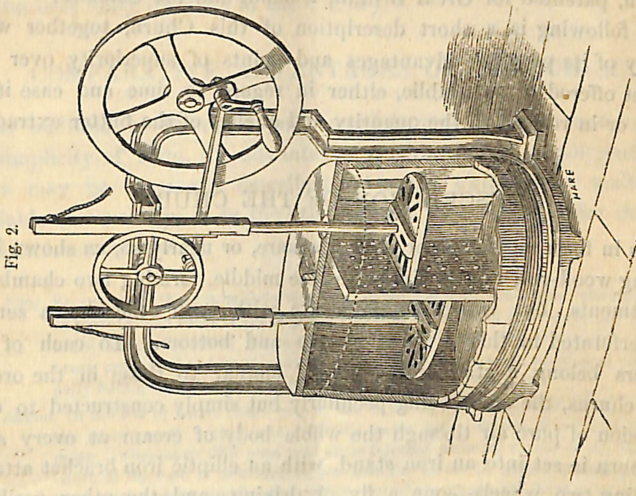
At a trial which took place at the Cleveland Agricultural Society's Show at Marston between Mr Hussey's Reaper and Mr M'Cormick's, the former gained the award for the following reasons:—*first*, Because it cut the corn in the best manner, especially across ridge and furrow, and when the machine was working in the direction of the corn laid; *second*, Because it caused the least waste; *third*, Because it did the most work; *fourth*, Because it leaves the corn in the best order for gathering and binding; *fifth*, Because it is the best adapted of the two for ridge and furrow; *sixth*, Because it is least liable to get out of order; *seventh*, Because it is at first cost much cheaper.

## IRON STORES, HOUSES, &c.



The accompanying Sketch shews a corrugated Iron House intended for emigrants or others, which can be made of any desired dimensions. The economy, cleanliness, facility of transport, erection, or removal, strongly recommend Iron Houses. In tropical climates the plan would be modified to obtain efficient ventilation. The same system of construction may be applied for RAILWAY CARRIAGE SHEDS, WAREHOUSES, STORES, MARKET HOUSES, COFFEE AND SUGAR FACTORIES, MEGASS SHEDS, and in general for all Estate Buildings, Roofs, &c. &c. A variety of other designs will be furnished by C. D. Young and Co. on application.

# DRUMMOND'S PATENT CHURN.



Messrs Charles D. Young and Co. have completed arrangements with Mr P. R. Drummond of Perth, by which they have acquired the right

of sole Licensees and Manufacturers of this most important and valuable invention, patented for Great Britain, Ireland, and the Colonies.

The following is a short description of this Churn, together with a summary of its peculiar advantages and points of superiority over every other yet offered to the public, either in regard to time and ease in production, or in respect to the quantity and quality of the butter extracted.

### DESCRIPTION OF THE CHURN.

It is in form an elliptic or oblong square, or nearly so, as shown in the foregoing wood-cut, and is divided in the middle, forming two chambers or compartments, but which communicate with each other by a series of holes perforated in this division at top and bottom. To each of these chambers belong a staff and '*dasher*,' similar to those in the ordinary plunge churns, the staffs being peculiarly but simply constructed to ensure an infusion of pure air through the whole body of cream at every stroke. The Churn is set into an iron stand, with an elliptic iron bracket attached, supporting two wheels—one a fly or driving, and the other oscillating, which latter acts between the upper ends of the two staffs, and is simply attached by means of a leather belt and cord. The fly-wheel is driven round by means of a handle attached to wheel and pinion, acting on the oscillating wheel by a connecting rod, effecting 200 strokes per minute. Fig. 2, annexed, with this description, will give a complete idea of this Churn.

The one staff as it is propelled downwards forces the cream through its dasher, and likewise through the division at the bottom into the other compartment, the other simultaneously forcing itself through the cream upwards, and in the same manner causing a *cross action* through the holes perforated at the top, and *vice versa*,—thus consummating the most rapid and complete action without in the least—from its rapidity—deteriorating the quality, protected as it is from such a possibility by the constant injection of fresh air which is forced in at every stroke.

Mr Drummond's invention is therefore simply a series of most important and valuable improvements upon the well-known Plunge Churn, in favour of which old principle, *even before these improvements were effected*, Mr Stephens, in that justly celebrated authority, the '*Book of the Farm*,' says that '*plunge or vertical Churns are held by many to be the most perfect for the production of butter, as well as for saving time in the operation, and when animal or any inanimate powers are applied to the*

‘ vertical or plunge Churn, it attains a character *superior to all others*, both  
 ‘ as to time and production, and this character is sustained throughout some  
 ‘ of the best dairy districts in the country.’

## COMPARATIVE ADVANTAGES OF THIS CHURN.

In addition to its rapid and complete action, light motive power, and simplicity of form, the advantages of this Churn in comparison with others may be succinctly described as under, while butter made in it is not liable to rancidity, as in the other churns now in use, from the following circumstances :—

*First.* Because here there is *no metal* whatever in contact with the cream; whereas in the box or barrel churn there is not only the galvanic influence of interior metal, but likewise the pernicious effects of iron working in iron, and often still worse, iron working in brass, producing and impregnating the cream with the same obnoxious refuse we see daily falling from the greased journals of machinery in motion.

*Second.* In the box or barrel churn now in use there is no means used to supply fresh air, the same rancid matter and injurious gases being driven every turn through the cream; whereas in this, pure vital air is injected *from the outside* to the bottom of the churn at the rate of 200 strokes per minute, as stated before, discharging itself up through the whole, and forcing entirely out of the churn the fetid matter existing in all cream that has been 24 hours off the milk.

*Thirdly.* In the churns commonly in use no adaptation of producing means can be made; the same ground has to be travelled over to obtain 1 as to obtain 20 lbs. of butter; some of them will only work when exactly half full, and are useless beyond 10 lbs.; whereas in this any quantity from  $\frac{1}{4}$  lb. to 2 cwt. can be made, and the same churn which makes 50 lbs. can make 1 lb., without any waste of power. It may also be safely driven either with or without the lids, and every change that takes place during the process of churning can thus be seen at once.

*Fourthly.* Another very important advantage connected with this Churn exists in the facility with which it can be removed from the stand and driving apparatus, and in the despatch with which the butter is gathered by means of the staff and plunger, without the necessity of using the hands.

## CAPABILITIES OF THIS CHURN.

C. D. YOUNG & Co. have no hesitation in stating that this Churn is the best ever invented in any country, or by any party whatever, and that it will excel and supersede every rival. The following is the result of three trials made at the Right Hon. the Earl of Mansfield's, Caen Wood, Middlesex, at the end of June :—

### TRIALS AT CAEN WOOD.

*First Trial.*—8 quarts stale cream produced full average quantity of butter in 4 minutes and 20 seconds.

*Second Trial.*—2 $\frac{3}{4}$  quarts new cream produced full average quantity in 6 minutes and 45 seconds.

*Third Trial.*—5 quarts produced 5 lbs. of butter in 3 minutes!!!

The above experiments were made in presence of several parties. The cream was of natural temperature, and the quality of the butter *very superior*.

The following is the result of a series of experiments with Scotch cream, made at Perth, Ayre, &c. :—

#### TRIALS AT MADERTY.

Comparative trial made at Maderty the end of February 1851 produced butter from cream in 5½ minutes, with temperature at 50°. *Quality very superior, and colour rich.* Another portion from the same quantity of cream, and churned at the same time, in the ordinary Plunge Churn, produced butter in 1 hour and 50 minutes!!! *Quality not nearly equal, and in colour quite bleached.*

#### TRIALS AT PERTH.

Trials made at Perth in the middle of June 1851 :—

*First Trial.*—2 gallons cream produced full average quantity of butter in 4 minutes exactly.

*Second Trial.*—2 gallons cream produced full average quantity of butter in 6 minutes and 40 seconds.

*Third Trial.*—2 gallons cream produced full average quantity of butter in 5 minutes.

*Fourth Trial.*—2 gallons cream produced full average quantity of butter in 5 minutes and 30 seconds.

The above four experiments were made from the same cream, but each was at a different temperature, varying from 64 to 69 degrees, and the quality of the butter was admitted by the best judges to be *infinitely superior* to any in the market brought in comparison on the same day.

#### TRIALS AT AYRE.

We, the undersigned, do hereby certify to being present, on 29th October 1851, at a trial of Drummond's Patent Anti-Metallic Churn, at the residence of WILLIAM M'WHINNIE, Esq., Blairstone Mains, Ayre, and testify to the fact that 1½ gallon of new thin cream, at a temperature of 66°, produced 3½ lbs. of butter in six minutes exactly; also, that at a temperature of 55° the above quantity of new cream produced an equal quantity of butter in 9½ minutes; that the quality and colour of butter were both excellent, and we do highly recommend the Churn.

(Signed)	WILLIAM M'WHINNIE, Blairstone.	JOHN CUNNINGHAM, Newark Castle.
	GEORGE DYKES, Dutchmills.	IVY BOYD, Alloway.
	ROBERT GRAY, Midton.	JOHN ROBERTSON, Ayre.
	JOHN HUNTER, Whiteleas.	

#### TRIALS AT KILMARNOCK.

We, the undersigned, hereby certify being present at a trial of Drummond's Patent Anti-Metallic Churn, on the 30th October 1851, at Messrs THOMAS STEWART & Son's shop, and we testify that 1½ gallon cream, at a temperature of 62°, produced full average quantity of butter in six minutes exactly; that the quality and colour were both very superior, and we do therefore highly recommend the Churn.

(Signed)	A. HERVEY, Berbeth Mains.	JOHN BOYD, Windyhill.
	ROB. GUTHRIE, Crossburn.	JOHN SHAW, Netherland.
	AND. AITON, Craighend.	DAVID CALDWELL, Inchgotrick.
	JAMES TAYLOR, Moorfield.	JOHN WHITE, Dykescroft.
	ANDW. CALDERWOOD, Borland.	GEO. M'LAKE.
	JAMES CARSE, Newton, Ayre.	JOHN A. THOMSON, Grange.

If it is at all an object to parties, C. D. Y. & Co. will engage to construct these Churns to produce perfect butter in *less than two minutes*; but for all practical purposes, the time taken in producing the results of these trials is sufficiently short, and they only mention the possibility of a shorter time to illustrate the extraordinary power and capabilities of this very important and valuable invention.

Of course all dairies in the kingdom will not produce alike in respect to quantity, that being in each case regulated by circumstances, and the above experiments were made with the two and four gallon Churns. The larger sizes take proportionably longer time.

### PRIZES GAINED BY THIS CHURN.

- FIRST PRIZE—From the Yorkshire Agricultural Society at their *Burlington Show*.  
 FIRST PRIZE—From the Northumberland Agricultural Society at their *Newcastle Show*.  
 FIRST PRIZE—From the Banffshire and Turriff Agricultural Society at their *Banff Show*.  
 FIRST PRIZE—From the North Lincolnshire Agricultural Society at their *Caistor Show*.  
 FIRST PRIZE—From the Royal Northern Agricultural Society at their *Aberdeen Show*.  
 FIRST PRIZE—GOLD MEDAL—At the Grand National Exposition, Tarvin Hall, *Chester*.  
 FIRST PRIZE—From the Cumberland Agricultural Society at their *Cockermouth Show*.  
 FIRST PRIZE—From the Royal North Lancashire Society at their *Lancaster Show*.  
 FIRST PRIZE—From the Wetherby Agricultural Society at their *Wetherby Show*.  
 FIRST PRIZE—From the East Cumberland Agricultural Society at their *Carlisle Show*.  
 FIRST PRIZE—From the Penrith Agricultural Society at their *Penrith Show*.  
 FIRST PRIZE—From the Blackburn Agricultural Society at their *Blackburn Show*.  
 FIRST PRIZE—From the Great Budsworth Agricultural Society at their *Great Budsworth Show*.  
 FIRST PRIZE—From the Manchester and Liverpool Agricultural Society at their *Manchester Show*.  
 FIRST PRIZE—From the Highland and Agricultural Society at their *Perth Show*.

&c. &c. &c.

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### TESTIMONIALS

IN FAVOUR OF

### DRUMMOND'S PATENT CHURN.

From EDWARD ROBINSON, Esq., Accountant, and Life Assurance Agent, Manchester.—  
*23d April 1852.*

Some months ago I called at your office respecting a Churn I had ordered through Messrs Richmond and Chandler of this town. After it came to hand I made several experiments with it in

conjunction with the two other Churns mentioned in the subjoined statement. I hand you the results, as they prove the superiority of yours, both as to time and yield. I may state, that when the cream is not taken off as thick as in these cases, it takes longer in each case, and would increase the average from six to nine or ten minutes. Many persons here (and in Cheshire) have seen my Churn, and want to know the prices. Would you be kind enough to send me some circulars, and I will do what I can for you.

CREAM IN EACH CHURN.			DRUMMOND'S CHURN.						METALLIC CHURN.						COMMON PLUNGE.					
Drummond's	Metallic.	Plunge.	lb.	oz.	dr.	ho.	min.	sec.	lb.	oz.	dr.	ho.	min.	sec.	lb.	oz.	dr.	ho.	min.	sec.
20 q <sup>ts</sup> divided thus	10 quarts	...	8	4	0	0	7	20	7	9	0	0	24	0	8	0	0	1	37	0
20 "	10 do....	...	8	3	0	0	6	40	7	8	8	0	22	30	8	1	0	1	25	0
20 "	10 do....	...	8	5	0	0	5	30	7	6	0	0	29	30	7	11	0	2	10	0
20 "	10 do....	10 quarts	8	6	0	0	4	45	7	8	0	0	12	15	8	5	0	0	47	0
20 "	10 do....	10 do....	8	7	0	0	6	20	7	10	8	0	26	0	8	1	0	1	25	0
20 "	10 do....	10 do....	7	1	0	0	50	50	6	3	0	0	15	20	7	11	0	2	10	0
16 "	8 do....	...	48	10	0	0	36	25	43	13	0	2	9	35	8	5	0	0	47	0
58 do....	58 do....	40 do....	48	10	0	0	36	25	43	13	0	2	9	35	32	1	0	5	59	0
Average yield per quart...			0	13	6 $\frac{1}{2}$	0	—	—	0	12	1 $\frac{1}{2}$	0	—	—	0	12	13 $\frac{1}{2}$	0	—	—
Average time of churning			0	—	—	0	—	4	—	—	—	0	21	35	—	—	—	1	29	45

From Mr WILLIAM BADCOCK, Altrincham, Chester.—16th March 1852.

My Churn was tried again yesterday, and gave very great satisfaction. Milk was used four times; each time in ten minutes, as near as possible, butter was produced—more weight than usual and of excellent quality—acknowledged superior.

From Mr PETER DALZIEL, Waterside, Dalry, Wigtonshire.—17th March 1852.

I am happy to state that the Churn is giving every satisfaction. Seven minutes seems the average time required; but the other night it did the work in exactly *two minutes and a half*. Both butter and buttermilk were excellent. It is creating quite a sensation in this country, so that you may expect a plentiful supply of orders shortly.

From the Reverend R. T. FORESTER, High Ercall, Salop.

I have now to inform you that I am delighted with the Churn, and instead of sending me another six gallon one, I hope you will be able to send me one that will churn twelve gallons of cream; and the one I already possess, viz. an eight gallon, will do instead of the six. If the Churn is made on the same principle, I will engage it to work well, whatever be its dimensions, therefore make me one for twelve gallons.

From Mr R. SINCLAIR, Patterdale Hall, near Penrith.

The Churn you sent here for Mr Marshall is giving very great satisfaction indeed.

From WILLIAM M. JARDINE, Esq. of Granton, by Moffat.

The Patent Churn I had from you continues to give me every satisfaction. I think it a first-rate article.

From the Reverend FREDERICK HAMILTON, Easternow Glebe, Boyle.—14th May 1852.

I feel much pleasure in being able to give my humble testimony to the value of the Drummond's Patent Churn, having used it six or seven times since I got it, and found it more than come up to my expectations, lessening the labour and time *greatly*, and producing most admirable butter, and I shall be glad to recommend it to my friends in this neighbourhood.

From WILLIAM SIM, Esq., Scotsburn, Parkhill.

The 4 Gallon Churn was used three times, and the last time, after it was properly seasoned, it gave full satisfaction, the butter being made in ten minutes, and the quality excellent.

From Mr SAMUEL WHEATLEY, Agent for Lady Pilkington, Newcastle, Staffordshire.

I send you post office order for Churn and Cheese Press, and beg to say that we are much pleased with the Churn.

From Mr JOHN ROBERTSON, Ryeburn, Dunlop.—8th July 1852.

We are perfectly satisfied with the working of the Churn; we can make butter with it quite easily in from 4 to 5 minutes.

From JOHN STANLEY, Esq., Armagh.—5th July 1852.

I will feel much obliged by your sending me, as early as possible, one of Drummond's Patent Metallic Churns, to contain forty gallons, same as the one Lord John Beresford got from you. He speaks highly of it; and Mr M'Kinstry, who got a twenty-three gallon one, strongly recommended me to you.

From T. T. STUBBS, Esq., Ballyshannon.—9th July 1852.

I believe you supplied Mr Hamilton of Coxtown with a Patent Churn of oval shape. Will you let me know the smallest size your plan is suited to. I want one to contain about 36 quarts, and shall be glad to hear the price delivered in Londonderry. Mr Hamilton told me he liked your Churn; it was at once simple and effective.

From HUGH ANDERSON, Esq., Bushmills.—14th July 1852.

Enclosed you have a post-office order for the amount of your account for Drummond's Patent Churn, the receipt of which you will please acknowledge. It is giving much satisfaction.

From ANTHONY BABINGTON, Esq., of Creevagh.—29th July 1852.

I send you an order on the Union Bank, London, for £6:4s.—the amount due to you for Drummond's Patent Churn. I have much pleasure in stating the Churn has exceeded my expectations for the last two months. It has produced invariably, in six minutes, upwards of 40 lbs. butter. If I had the same number of cows I had last year, I am quite certain we could have 80 lbs. in the same time. I lately read a statement praising the Ayrshire Box Churn. I can safely and fairly testify to the great superiority of Drummond's, having used the Ayrshire Churn for ten years. I was well pleased with the Ayrshire, and thought nothing could surpass it, till Drummond's proved the contrary.

From Mr L. WHITLY, Farm Bailiff to T. Hibbert, Esq., Birkes Hall.—29th May 1852.

As you requested me to inform you how the New Patent Churn did its work, I have the pleasure to state, that after a fair trial in both cold and hot weather, it surpasses everything of the kind I ever saw. Being the first of the kind introduced here, it will be a great satisfaction to learn that it will produce butter in half the time it takes with the windlass churn, and requires so little labour that a child six years old could work it for a day. Our dairymaid sits all the time when working it, and it is really astonishing the ease of action, the little finger being sufficient to turn for half an hour.

To Messrs Richmond and Chandler.

## PRICES, DELIVERED IN GREAT BRITAIN.

	EDINBURGH.	GLASGOW.	LIVERPOOL.	LONDON.
Size to churn 2 gallons...	35s. each.	37s. 6d. each.	40s. each.	40s. each.
" to churn 3 " ...	40s. "	42s. 6d. "	45s. "	45s. "
" to churn 4 " ...	45s. "	48s. "	50s. "	50s. "
" to churn 6 " ...	60s. "	64s. "	66s. "	66s. "
" to churn 8 " ...	65s. "	70s. "	72s. 6d. "	72s. 6d. "
" to churn 12 " ...	80s. "	85s. "	88s. "	88s. "
" to churn 16 " ...	90s. "	95s. "	100s. "	100s. "

and they will be sold in Australia and other foreign countries at the above rates with the addition of freight, insurance, shipping charges, and packing cases.

## SPECIFICATIONS AND ESTIMATES FOR IRON AND WIRE FENCES, &c. FOR AUSTRALIA.

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Messrs CHARLES D. YOUNG & Co. beg to submit subjoined Specifications and Estimates for the several varieties of the Iron and Wire Fences, &c., for Australia, as figured and described in the preceding pages.

### PLATES I & II.

**ESTIMATE No. 1.**—Strong Galvanized Wire Net Fence,  $3\frac{1}{2}$  feet high, with strong Wrought Iron Uprights, having prongs for fixing into wood blocks, placed every 15 feet, with Wrought Iron Patent Screw Straining Pillars, one for every 200 yards of fence, Double Stays and Sole-plates, two of each for every mile, and one strong Horizontal Wire for the top, £176 per imperial mile of 1760 yards, being at the rate of 2s. per yard run of fence complete.

**ESTIMATE No. 2.**—If the uprights for the above fence are made with double Cross-tails for fixing into the ground without requiring wooden blocks, the price will be £190:13:4 per imperial mile, being at the rate of 2s. 2d. per yard run of fence complete. As in the above fence the Wire Netting alone is galvanized, the other portions are painted.

### PLATE III.

**ESTIMATE No. 3.**—Strong Galvanized Wire Net Fence, same as in Estimates Nos. 1 and 2, with one strong Top Horizontal Wire ungalvanized, complete, with Staples for fixing to wood uprights, £146:13:4 per imperial mile, being at the rate of 1s. 8d. per yard run of fence complete.

**ESTIMATE No. 4.**—Strong Galvanized Wire Net Fence, same as Estimate No. 3, but without the Top Horizontal Wire and Staples, £139:6:8 per imperial mile, or at the rate of 1s. 7d. per yard run complete.

## PLATES IV & V.

### ESTIMATE No. 5.—Strong Strained Iron and Wire

**Fence**,  $3\frac{1}{2}$  feet high, consisting of Six strong Horizontal Rods of the best prepared Fencing Wire, in *long lengths*, with strong wrought-iron Intermediate Uprights, pointed for fixing into wood blocks every 7 feet apart, with Patent Screw Straining Pillars, 12 to the mile, and two Double Stays and Sole-plates to every mile, £95 : 6 : 8 per imperial mile, or 1s. 1d. per yard run of fence complete.

### ESTIMATE No. 6.—Strong Strained Iron and Wire

**Fence**. In every respect the same as specified in Estimate No. 5, but to have the intermediate uprights made with Double Cross-tails for fixing into the ground without requiring wood blocks, £128 : 6 : 8 per imperial mile, or at the rate of 1s.  $5\frac{1}{2}$ d. per yard run of fence complete.

All the iron work of the Fences specified in Estimate Nos. 5 and 6 is painted, and the wire oiled.

## PLATE VI.

### ESTIMATE No. 7.—Strong Strained Wire Fence for

**Wood Posts**, consisting of Six Strong Horizontal Rods of the best prepared Fencing Wire, in *long lengths*, £34 : 16 : 8 per imperial mile, or  $4\frac{3}{4}$ d. per yard run.

If this Fence is wished with Patent Screw Straining Pillars and Stays, as is strongly recommended, the price will be £47 : 13 : 4 per imperial mile, or  $6\frac{1}{2}$ d. per yard run,—12 Pillars, 2 Double Stays, and Sole-plates allowed to each mile.

## PLATE VII.

### ESTIMATE No. 8.—Strong Strained Wire Fence for

**Wood Posts**, consisting of Six Strong Horizontal Rods of the best prepared Fencing Wire, in *long lengths*, with pointed hardened Staples for fixing the wires to the posts, £38 : 10s. per imperial mile, or  $5\frac{1}{4}$ d. per yard run.

If this Fence is wished with Patent Screw Straining Pillars and Stays, as is strongly recommended, the price will be £51 : 6 : 8 per imperial mile, or at the rate of 7d. per yard run,—12 Pillars, 2 Double Stays, and Sole-plates allowed to the mile.

If any of the Strained Wire Fences shewn in Plates IV, V, VI, and VII, have the wire **galvanized**, the cost will be 2d. per yard run of six-wire fence additional.

### PLATE VIII.

**ESTIMATE No. 9.—Patent Portable Sheep Fold**, 3 feet 9 inches high, complete, with strong Wrought-Iron Standards, Stays, and Sole-plates, the Netting galvanized, and the Iron-work painted, 2s. 6d. per yard run, measuring all sides—made to any size.

Gates for each Fold, with hangings and bolt complete, 18s. 6d. each extra.

### GATES, &c.

**Strong Wrought-Iron Premium Gate**, same as shewn in the Fence, Plate V, 10 feet wide, 40s. each. If made in two halves, and one of the leaves self-shutting, 12s. 6d. each extra.

**Strong Wrought-Iron Patent Trussed Gates**, 10 feet wide, same as shewn in the Fence, Plate VII, 30s. each. If made in two halves, and one of the leaves self-shutting, 12s. 6d. extra.

**Hand Gates**, 4 feet wide, and made self-shutting, 18s. 6d. each.

Patent Screw Pillars for the above, if required, 18s. 6d. each. Double Stays 9s. 6d. each, and Sole-plates 5s. 6d. each.

### CHURNS AND REAPERS

SOLD BY

Messrs CRAWLEY and SMITH.....	<i>Sydney.</i>
Messrs WESTGARTH, Ross, and COMPANY.....	<i>Melbourne.</i>
Messrs A. L. ELDER and COMPANY.....	<i>Adelaide.</i>

## HIV 57A19

They would also solicit notice to their general Price List for **Iron Castings**. The extent of their works, and their favourable position in the iron and coal districts with a shipping port, enable them to undertake contracts to any extent, and at rates corresponding with the local advantages possessed.

### PRICES.

**GALVANIZED IRON CORRUGATED SHEETS.**

Size No. 14 Wire Gauge .....	£25	0	0	per ton.
"      15      do. ....	25	5	0	per do.
"      16      do. ....	25	10	0	per do.
"      17      do. ....	26	2	6	per do.
"      18      do. ....	26	15	0	per do.
"      19      do. ....	27	5	0	per do.
"      20      do. ....	27	15	0	per do.

If curved, 15s. per ton extra.

## IRON CASTINGS.

Cast Iron Girders ..... from £5 10 0 to £7 per ton, according to specifications.

Cast Iron Columns..... from 5 10 0 to 7 per ton, do. do.

Cast Iron Water Pipes, from 6 0 0 to 8 per ton,	do.	do.
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Cast Iron Gas Pipes ... from 6 0 0 to 8 per ton,	do.	do.
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Railway and Engineers' Castings as per special agreement.

Cast Iron Balusters for Gates and Railing as per do.

Cast Iron Stable Fittings as per do.

Cast Iron Sugar Pans, proved and varnished, from 10s. to 14s. per cwt.

Cast Iron Troughs, every description ..... from 8s. to 14s. do.

&c. &c. &c.

## PRIZE LIST FOR 1851.

Messrs C. D. YOUNG & CO. also add the following List of Prizes gained during the season of 1851, commencing with

### THE PRIZE MEDAL OF THE GREAT EXHIBITION,

For their SIMULTANEOUS ACTING LEVEL CROSSING GATES for Railway Purposes.

### PRIZES GAINED BY THEIR CORN RICK STANDS.

- FIRST PRIZE—From the Yorkshire Agricultural Society at their Burlington Show.
- FIRST PRIZE—From the Northumberland Agricultural Society at their Newcastle Show.
- FIRST PRIZE—From the Royal Northern Agricultural Society at their Aberdeen Show.
- FIRST PRIZE—From the Manchester and Liverpool Agricultural Society at their Manchester Show.
- FIRST PRIZE—From the Banffshire and Turriff Agricultural Society at their Banff Show.
- FIRST PRIZE—From the North Lancashire Agricultural Society at their Caistor Show.
- FIRST PRIZE—From the Cumberland and Westmoreland Agricultural Society at their Cocker mouth Show.
- FIRST PRIZE—From the Royal North Lancashire Agricultural Society at their Lancaster Show.
- FIRST PRIZE—From the East Cumberland Agricultural Society at their Carlisle Show.
- FIRST PRIZE—From the Penrith Agricultural Society at their Penrith Show.
- FIRST PRIZE—From the Blackburn Agricultural Society at their Blackburn Show.
- FIRST PRIZE—From the Royal South Lancashire Agricultural Society at their Bury Show.
- FIRST PRIZE—From the Royal Agricultural Improvement Society of Ireland at their Dublin Show.
- FIRST PRIZE—From the Fochabers Agricultural Society at their Fochabers Show.
- FIRST PRIZE—From the Cheshire Agricultural Society at their Northwich Show.

### PRIZES GAINED BY THEIR DRUMMOND'S PATENT CHURN.

- FIRST PRIZE—From the Yorkshire Agricultural Society at their Burlington Show.
- FIRST PRIZE—From the Northumberland Agricultural Society at their Newcastle Show.
- FIRST PRIZE—From the Banffshire and Turriff Agricultural Society at their Banff Show.
- FIRST PRIZE—From the North Lincolnshire Agricultural Society at their Caistor Show.
- FIRST PRIZE—From the Royal Northern Agricultural Society at their Aberdeen Show.
- FIRST PRIZE—GOLD MEDAL—At the Grand National Exposition, Tarvin Hall, Chester.
- FIRST PRIZE—From the Cumberland and Westmoreland Agricultural Society at their Cocker mouth Show.
- FIRST PRIZE—From the Royal North Lancashire Society at their Lancaster Show.
- FIRST PRIZE—From the Wetherby Agricultural Society at their Wetherby Show.
- FIRST PRIZE—From the East Cumberland Agricultural Society at their Carlisle Show.
- FIRST PRIZE—From the Penrith Agricultural Society at their Penrith Show.
- FIRST PRIZE—From the Blackburn Agricultural Society at their Blackburn Show.
- FIRST PRIZE—From the Great Budsworth Agricultural Society at their Great Budsworth Show.
- FIRST PRIZE—From the Manchester and Liverpool Agricultural Society at their Manchester Show.

### PRIZES GAINED BY THEIR CHEESE PRESS.

- FIRST PRIZE—From the Yorkshire Agricultural Society at their Burlington Show.
- FIRST PRIZE—From the Banffshire and Turriff Agricultural Society at their Banff Show.
- FIRST PRIZE—From the Royal Northern Agricultural Society at their Aberdeen Show.
- FIRST PRIZE—From the Royal Agricultural Improvement Society of Ireland at their Dublin Show.
- FIRST PRIZE—From the East Cumberland Agricultural Society at their Carlisle Show.

**OFFICES.**

**48 NORTH BRIDGE ..... EDINBURGH.**

**19 GREAT GEORGE STREET, WESTMINSTER... LONDON.**

**32 ST ENOCH SQUARE ..... GLASGOW.**

**1 CASTLE BUILDINGS, DERBY SQUARE ..... LIVERPOOL.**

**NEWSPAPER**



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